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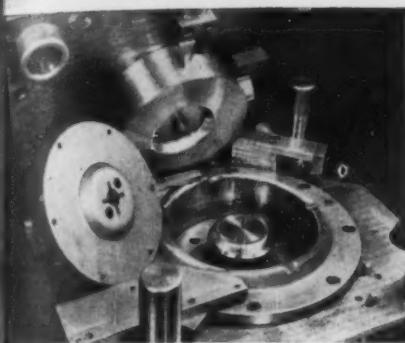
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Tool Steel Topics



BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation. Export Distributor: Bethlehem Steel Export Corporation



A-H5 tool steel is the backbone of this die which forms the flywheel element of a Borg-Warner automatic transmission from .1495-in. steel sheet in a 1000-ton press. This die must hold accurate size during hardening because it produces precision parts.

Precision dies of A-H5 for Borg-Warner transmissions

Talk to the production men at McIntosh Stamping Co., in Detroit. Ask them how they like the A-H5 tool steel they're using in many of their precision dies. They'll tell you it's doing a good job. It's highly resistant to distortion during heat-treatment. It wears well on long runs, has durable cutting edges, and takes a lot of shock in heavy-duty stamping presses.

A-H5 is our 5 pct chromium air-hardening grade that comes close to the high-carbon, high-chromium grades in its safe, accurate hardening properties. Yet it's as economical as most oil-hardening grades. Easy to machine and heat-treat, too. It's being used more all the time by tool and die makers who want a general-purpose grade, one that's a consistently fine performer and needs no pampering.



A-H5 tool steel adds wear and shock-resistance to this high-production die, hardened to Rockwell C-58, which forms the back-plate for a direct-drive clutch in a 2092-in. steel sheet in a 250-ton press.

Photos courtesy of McIntosh Stamping Co., Detroit. Parts used in torque converter made by Lang Mfg. Co., a division of Borg-Warner Corp.

Customer in Jam, Distributor Flies Tool Steel to Him in Own Plane

The phone rang the other day at the home of one of our distributors while he was at breakfast. It was one of his New England customers in a city several hours distant by car.

"I'm in real trouble," moaned the customer. "I need some tool steel in the worst way. And I've got to have somebody to show us how to heat-treat it. Every hour is costing me plenty!"

Our distributor jotted down the details and grabbed his hat. He rushed over to his warehouse, had the short bars cut to exact length, and loaded them in his car. Then he headed for the airport. Here was his chance to cash in on his week-end flying lessons!

At the airport they had a red monoplane ready, engine warmed up and rarin' to go. In a matter of minutes he was taxiing down the field and off he roared into the wild blue yonder. And in less than two hours after the phone call he was delivering the tool steel and giving the grateful customer some pointers on how to heat-treat it for best results.

Not every Bethlehem distributor can personally fly tool steel to you to meet an emergency. But when you need fast de-



livery, your Bethlehem distributor is ready to rush your order for popular grades and sizes of carbon tool steel, oil- and air-hardening grades, shock-resisting, hot-work, and high-speed steels. He carries tool bits, brake die steel and other specialties that you need frequently. And he knows that he can call on the Bethlehem tool steel metallurgists to solve unusual problems and to handle special orders with our mill and laboratories.

They're mighty capable folks to depend on for tool steel service, whether it's an emergency, a tough problem, or a routine requirement. That's why we say: "Hats off to the Bethlehem Distributors! They're doing a real job!"



Our Tool Steel Engineer Says: *Decarburized surfaces cause premature tool failures*

Most toolmakers know that decarburized metal must be removed completely from the working surfaces of tools. But it is not so widely known that it's often best to remove this skin from other portions of the tool.

This precaution is especially necessary on tools subject to repeated impacts. For example, a pneumatic chisel having a forged shank often breaks because of a

fatigue failure. Usually there is a stress concentration in the shank, due to the change in section; and when this tool surface is also decarburized, rapid failure in service can occur.

The outer layers of a decarburized tool just don't have the strength of the effectively hardened tool steel base. The only safe thing to do is grind off the "decarb" on all tool surfaces.

Bethlehem



Tool Steel